

Amendment under 37 CFR 1.116  
Nobuaki SUGITA

U.S. Patent Application S.N. 09/528,986  
Attorney Docket No. 020259

**REMARKS**

Claims 1-8 are pending in this application. Amendment to the specification is made to correct typographical errors. No new matter has been added by this amendment.

**Claims 1-8 stand rejected under 35 U.S.C. 102(a) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Wakabe et al. (U.S. Pat. No. 6,136,464) (Office action paragraph 4).**

Applicants first note that although the rejection is stated to be under 35 U.S.C. 102(a), Wakabe et al. is not a valid reference under 35 U.S.C. 102(a), due to its publication date of October 24, 2000, which is after the filing date of the present application. However, Wakabe et al. is a valid reference under 35 U.S.C. 102(e) because it has a filing date of March 3, 1995, and the reference will be treated here as a reference under 35 U.S.C. 102(e).

Reconsideration of the rejection is respectfully requested.

In traversing the rejection, Applicants assert that Wakabe does not teach a thin film that covers a gas release hole, does not teach a gas release valve, and does not teach a shielding member as required by claim 1.

Regarding the "thin film", the Examiner states that "In one embodiment, the valve includes a thin film cover which is penetrated by a cutting device (see figures 4, 8, or 9 and col. 6, line 40 through col. 7)" (page 3, lines 8-9 of the Office action.) The Examiner here appears to be referring to Wakabe's charge-discharge lead 102 and charge-discharge lead cutting device 103, which are

located below gas vent hole V in case cover 108. "The charge-discharge lead 102 may be a thin wire or a sheet ..." (column 7, line 22).

Here, Wakabe's charge-discharge lead 102 is being viewed as a "thin film." However, Applicants assert that this element is not consistent with the recitation of claim 1, which requires "a gas release valve **formed by covering** a gas release hole in the closure cap with a thin film..." Claim 1 thus recites a thin film which **covers**, that is, completely spans the gas release hole to retain gas. This thin film is designed to rupture as in the prior art disclosed on page 3, line 9 of the present specification.

In making these arguments, Applicants respectfully disagree with the interpretation of Wakabe in the Examiner's Response to Arguments, in paragraph 6, line 5 of the Office Action. Here, the Examiner states: "In a second embodiment (figure 14), the vent holes are covered with a thin sheet of metal."

Rather, Applicants assert that Wakabe's charge-discharge lead does not **cover** a gas release hole. This is true in Wakabe's embodiments of Figures 4, 8 and 9, as can be seen most clearly in the view of Figure 10, where the charge-discharge lead only occupies a portion of the hole opening. Wakabe states that the charge-discharge lead can be "a thin wire or a sheet and it may assume any other shapes ..." (column 7, line 22). It would be impossible for a thin wire to cover a hole. Clearly, Wakabe is neither teaching nor suggesting a structure which covers a hole.

Regarding the "gas release valve" of claim 1, Applicants note that the charge-discharge lead of Wakabe is designed to be cut by lead cutting device 103, but the purpose of this cutting is to interrupt current flow (column 8, line 6; line 23, etc.), and **not** to release gas. Thus, although there

is a vent hole V at that location, these elements do not represent a gas release valve, as recited in claim 1.

Applicants further assert that Wakabe does not provide "a shielding member," as recited in claim 1. The Examiner appears to imply that "packing material" in Wakabe is the shielding member, apparently referring to packing 9 in Figure 4, packing 111 in Figure 8, or packing 204 and 207 in Figure 13. These packings are formed of resin.

However, the present specification makes it clear that the function of the shielding member is to prevent liquid drops from the generator element from vertically hitting the thin film (page 5, lines 14-19). This is recited in claim 1 as "located between the thin film and the generator element to protect the thin film from the electrolyte so as to secure a gas channel from an internal space of the external casing to the gas release hole." Applicants assert that Wakabe's packings do not meet this location limitation. In Wakabe (Figure 14C), there is an opening at the position corresponding to the location of the thin film in claim 1. Moreover, it is apparent that Wakabe's packing 207 does not perform the function of the shielding member recited in claim 1.

Since Wakabe does not teach or suggests a thin film, a gas release valve or a shielding member having the limitations recited in claim 1, Applicants assert that no *prima facie* case of obviousness can be made using Wakabe et al., and that claims 1-8 are novel and non-obvious over this reference.

**Claims 1-2 and 4-5 are rejected under 35 U.S.C. 103(a) as unpatentable over JP 07022013.**

Reconsideration of this rejection is respectfully requested.

In the rejection, the Examiner states that JP'013 teaches a battery having a vented seal structure, with the vent including a battery cover with a gas emission hole, and the Examiner admits that JP'013 does not teach the cover hole to be covered with a thin film. In the Response to Arguments, on page 6, the Examiner states that the vent hole, although not covered by a thin film, is covered with a thin metal terminal contact.

Here, the Examiner apparently refers to the negative electrode terminal plate 9 in JP'013 as the recited thin film, although the Examiner indicates that this is not a "thin film covering" the gas emission hole. Applicants assert that terminal plate 9 does not "cover" the hole (as recited in claim 1) at all, because terminal plate 9 leaves allows for the escape of gas, as shown in the arrows in Figures 2-4. Since terminal plate 9 must allow for the escape of gas, there is no suggestion or motivation in the reference to have terminal plate 9 cover the hole.

In addition, Applicants note that the Examiner apparently takes gasket 7 in JP'013 as the recited "shielding member." However, Applicants note that gasket 7 ruptures under pressure (paragraph [0013]), and therefore does not serve the function of the shielding member. Gasket 7 actually functions as a valve, but gasket 7 does not meet the structural limitations of the valve in claim 1.

Since JP'013 discloses neither a thin film that covers a gas emission hole nor a shielding member, no *prima facie* case of obviousness can be made for the present claims using this reference, and claims 1, 2, 4 and 5 are novel and non-obvious over this reference.

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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned Agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

A marked-up version showing the changes made by the present amendment is attached hereto as "Version with Markings to Show Changes Made."

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully Submitted,

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Enclosures: Version with Markings to Show Changes Made  
Petition for Extension of Time  
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## COPIES WITH MARKINGS TO SHOW CHANGES MADE

### IN THE SPECIFICATION:

Please amend the specification as follows:

Please amend the paragraph beginning on page 4, line 21, as follows:

The break of the thin film is tracked down when conventional sealed batteries that have the gas release valve on the closure cap are dropped. It is found that liquid drops of the electrolyte break the thin film as follows. At the impact of drop, liquid drops of the electrolyte with which the generator element is impregnated are pushed out of the generator element at the side of the closure cap. The internal interval between the closure cap and the generator element is set so small that liquid drops that has been pushed out at the side opposed to the thin film directly hit and break the thin film.

Please amend the paragraph beginning on page 9, line 13, as follows:

The cover plate 31 is provided with a gas release valve 36 at a place between the center and the end. The gas release valve 36 is formed by attaching a thin film 361 to the cover plate 31 so as to cover a round gas release hole 360 in the cover plate 31. Having ~~has~~ high hermeticity, and high resistance to pressure and heat, rolled metal foil is preferable for the thin film.

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